Pre Ph.D. Synopsis

Title of research proposal

"STUDIES ON MEDICINAL PLANTS OF FABACEAE USED IN FOLKLORE MEDICINES FROM MARATHWADA"

Pre Ph.D. Synopsis of the proposed research plan

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Submitted by

PATIL SUNIL C.

Under the Guidance of

Dr. Suresh M. Telang

Assistant Professor,

Department of Botany,

YESHWANT MAHAVIDYALAYA, NANDED.

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Submitted by
Name of the Research Scholar:
PATIL SUNIL C.

Place of work
Botany Research Laboratory,
YESHWANT MAHAVIDYALAYA, NANDED.

Under the Supervision of

Dr. Suresh M. Telang
Assistant Professor,
Department of Botany,
YESHWANT MAHAVIDYALAYA, NANDED.

Signature
Research Scholar

Signature
Research Supervisor/Guide

INTRODUCTION

Rigveda, recently declared to be world's heritage, is the oldest record of Indian medicine vis-à-vis medicinal plants. Later records of indigenous medicines can be traced back to

the sixteenth century. Garcia da Orta (1563) documented Indian plantlore / medicolore in his 'Colloquios dos simples e drogas e cousas medicinas de India'. Christobel Acosta (1578) noted some medicinal plants in his 'Tracado de las drogas medicinas de las Indians Orientalis'. Hendrik Adriaan Van Rheede took notice of local medicinal plants in his 12 volumes of 'Hortus Indicus Malabaricus'during 1678 to 1693 [Manilal 1999]. Medicinal utilities of Indian herbs have been recorded in Indian subcontinent before Indian Independence [Roxburgh 1832, Watt 1889-1896, Bodding 1925, 1927]. After Indian Independence (1947).

The history of ethnomedicine is nearly as old as human civilization. Modern societies are seeking to understand the treasures of indigenous medicolore with the help of tribals and forest dwellers. Investigations on ethnomedicines have offered immense scope and opportunities for the development of new drugs. Some modern well known Indian modern drugs have been developed through ethnomedicine e.g. Ninbolin, Livomyn, Carimnozyme and others. Even some ethnomedicinal claims find place in modern medicinal uses e.g. *Urena lobata*, *Garuga pinnata*, *Tylophora indica* against rheumatism, asthma and bronchitis respectively and many such other sources are on record [Patil 2006]. The drugs quinine, digoxin, ephedrine, cocaine, artemisine, etc. also form such classic examples [Patil 2008]. Thus the indigenous wisdom and ethnomedicinal practices can be validated on modern scientific lines such as bioassay and

improved methods of fractionation, isolation and characterization of compounds.

Traditional medicine (also known as indigenous medicine or folk medicine) comprises medical aspects of traditional knowledge that developed over generations within the folk beliefs of various societies, including indigenous peoples, before the era of modern medicine.

Medicinal plants have been known from time immemorial and are highly known all over the world as a rich source of therapeutic agents for the prevention of various ailments. Many plants have been used for the treatment of kidney stones in traditional system of medicine throughout the world. Indeed along with die tary measure s, plant preparation formed the basis of treatment of various diseases until the introduction of allopathic medicine. Ethnobotany and ethnopharmacology has been seen as a tool for drug discovery (Schultes 1962), a mode of ascertaining conservation (Cox 1997). Indian folklore medicine encompasses a wide variety of plants and its products/extracts for general health and to treat reproductive disorders. Broadly, these treatments are classified under three major groups, namely Ayurveda, Siddha and Unani. Traditional medicine as practiced especially by people isolated from modern medical services and usually involving the use of plant-derived remedies on an empirical basis as comparison to home remedy.

REVIEW OF LITERATURE AND DEVELOPMENT IN THE SUBJECT (PREVIOUS WORK DONE IN THE RELEVANT AREA)

Pandey and Shukla (2003) in his article titled, Indian subcontinent is renowned for its cultural and plant biodiversity where large number of people are still living in tribes. These tribal people possess a pool of

undisclosed, ethnomedicinal, and ethnopharmaco- logical information regarding the flora of their surroundings, which may prove to be very helpful in rural community with its advantage. Natural wealth as well as the undisclosed ethnopharmacological information and the tribal cultures have been decreased remarkably at a disturbing rate due to change in life style, unintentional developmental programs, and mounting recent civilization. Negligence by the youth also influences the traditional knowledge.

Kala, (2000) in his article titled, Conversely, because information on the use of plant species for therapeutic purpose has been passed from one generation to the next through oral tradition, this knowledge of therapeutic plants has started to decline and become obsolete through the lack of recognition by younger generations as a result of a shift in attitude and ongoing socioeconomic changes.

Kanthale and Biradar (2012) studied ethnomedicinal uses of plant wealth by Gond, Kolam, Pradhan, Naikde and Andh tribes of Mahur range forest. 25 plants were recorded which are used by tribal peoples in formulation of 32 different ethnomedicinal preparations for curing 24 types of different diseases such as white discharge, dysentery, fever, cough, kidney stone, asthma etc. They also observed that tribal's of Mahur forest ranges have adequate ethnomedicinal knowledge.

Vijigiri and Raut (2019) surveyed ethno-medico botanical explorations in forest areas of Mahur taluka and subsidiary areas resulted in the information on the plants used in treating many diseases. Information gathered from Mahur taluka shows that the indigenous and other village

people of this region have good knowledge of plants in treating different ailments.

Majority of the species reported were from families Lamiaceae, Fabaceae, Acanthaceae and Euphorbiaceae.

Ghorband and Biradar (2012) conducted an explorative ethnomedicinal survey during 2007-2009 and collected information on the use of medicinal plants from herbal practitioners of Gond, Andh, Kolam and Pradhan tribes of Kinwat forest ranges of Nanded district of Maharashtra. Tribes are mainly depending upon forest flora for their livelihood and for curing the ailments and diseases. As many 25 ethnomedicinal plants for preparing 25 types of formulations to treat 25 types of diseases used were recorded. 19 plants are used for polyherbal preparations. The study done provides information about some therapeutic uses of 25 angiospermic plant species belonging to 21 families. Bhandari, (2004) in his article titled, Due to inappropriate utilization of eco-resources, many plant and tree species are endangered and may become scarce due to lack of proper arrangement for their protection and growth. With the help of tissue culture techniques, it is period to protect this endangered plant (Citrullus colocynthis).

Opara (2004) in his article titled, In India, the ayurvedic system has described a large number of such medicines based on plants or plant product and the determination of their morphological and pharmacological or pharmacognostical characters can provide a better understanding of their active principles and mode of action

OBJECTIVES OF RESEARCH/PROPOSED HYPOTHESIS

1. To survey the use of medicinal plant in folklore medicine
2. To study the availability of folklore plants.
3. To survey medicinally important plants of folklore medicinal plants.
4. To perform Phytochemical analysis of folklore medicinal plants.
5. To determine bioactivity of folklore medicinal plants.
6. To determine antimicrobial potential of folklore medicinal plants.

METHODOLOGY

PHASE-I: LITERATURE SURVEY, COLLECTION OF PLANT MATERIALS.

In first phase initially focus will be given on literature survey, knowing geographical features of the area along with metrological data, brief history of botanical exploration and general characters and vegetation. Exhaustive information on medicinal will be gathered from local tribal communities Accordingly plant materials will be collected from the field identified using standard flora (Naik V. N. 1998).

PROCEDURE OF DATA COLLECTION

The data will be collected through questionnaire, observation and interview techniques. The researcher will also use the essential statistical techniques to analyze and interpret the data.

DATA ANALYSIS

After collecting the data from the respondents by using various tools, the researcher goes for the data analysis with appropriate statistical techniques. By using these techniques the researcher will investigate the impact of folklore use

of plants in relation to service of mankind, particularly in the treatment of ailments.

PHASE-II:Observation on Folklore uses of medicinal Plants-

The local and rural communities will be approached to collect authentic information on plants used by them for the treatments of their ailments for various kinds of diseases. The folklore medicinal plant's data will be obtained from local herbal medical practitioners of the respective areas. The folklore medicinal plants will be studied under the following heads.

(a) Botanical name, vernacular name, and the name of the family. (According to Bentham and Hooker's system of classification).

(b) All collected plants will be described in semi technical language.

PHASE-III: PLANT EXTRACTION AND PRELIMINARY PHYTOCHEMICAL ANALYSIS.

In this phase collected plant samples from the field will be subjected for solvent extraction using soxhlet unit. The Phytochemical analysis will be done from different plant parts. To do the Phytochemical analysis standards procedures will be followed as mentioned by Harborne, (1973) Thimmaiah, (1999).

Phase-IV: Antimicrobial activities of medicinal plant parts plant extract.

Antimicrobial activity of plant extracts will be tested against different fungi and bacteria for their growth inhibition. This study will be done by using standard protocols.

Phase-V: Compilation of work.

Scientific writing of thesis will be done for final submission to SRTM University.

Significance of the study: Rich heritage of knowledge of medicinal plants of the local people will be demonstrated by this investigation. The obvious forces of acculturation and biotic interference warrant conservation of their knowledge. However, studies on scientific lines such as chemistry of species used, their biological activities, clinical trials, etc. are the need of hour.

The study of diversity of medicinal plants from a specific geographical region is a need of hour. The knowledge by which the tribal and rural people are surviving since time immemorial will be surely helpful to the humanity, with this point of view the present work was under taken to explore more about.

Several folklore medicinally important plants have significant value to control and treat many pathogenic, metabolic, genetic and other lethal diseases. These plants are known to be possessing very effective medicinal properties might provide a basic raw material for making huge medicinal preparations. It's therefore necessary of further DNA barcode study to identify new novel species and proper conservational strategies should be initiated regarding this important folklore medicinal plants.

Proposed work Plan/ Formulation and Structure of Study: Year-wise Plan of work and targets to be achieved

Sr. No.	Year	Activity	Tentative Duration
1)	Ist Year	1. Completion of the coursework 2. Review of literature 3. Identification the problem 4. Finalization of the research problem statement 5. Formulation of the objectives, hypotheses and methodology	12 Months
2)	IInd Year	1. Tool preparation (Validity & Reliability) of the tool 2. Data collection 3. Analyzing the data and interpretation of study findings 4. Summary preparation and Submission	12 Months
3)	IIIrd Year	1. Conference proceedings 2. Paper publications 3. Paper presentations 4. Writing the thesis 5. Submission of thesis	12 Months

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Signature **Signature**

Patil Sunil C. **Dr. Suresh M .Telang**
Research Scholar **Research Guide**